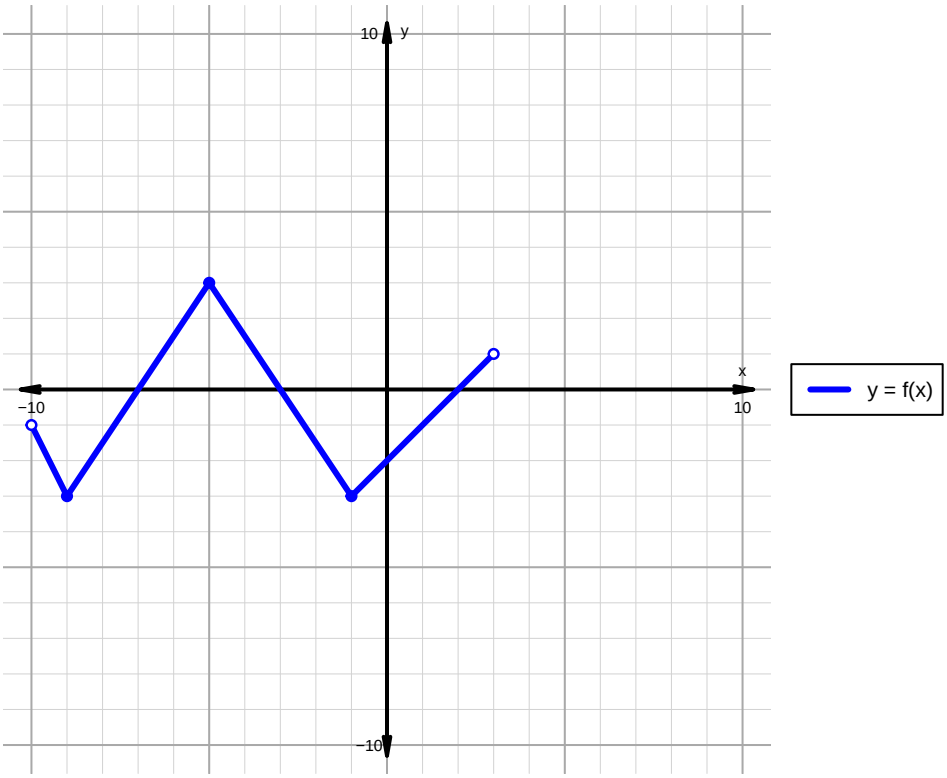
Name: Date:

Intervals, Transformations, and Slope Solution (version 169)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7,-3)\cup(2,3)$
Negative	$(-10,-7)\cup(-3,2)$
Increasing	$(-9,-5)\cup(-1,3)$
Decreasing	$(-10,-9)\cup(-5,-1)$
Domain	$(-10,3)$
Range	$(-3,3)$

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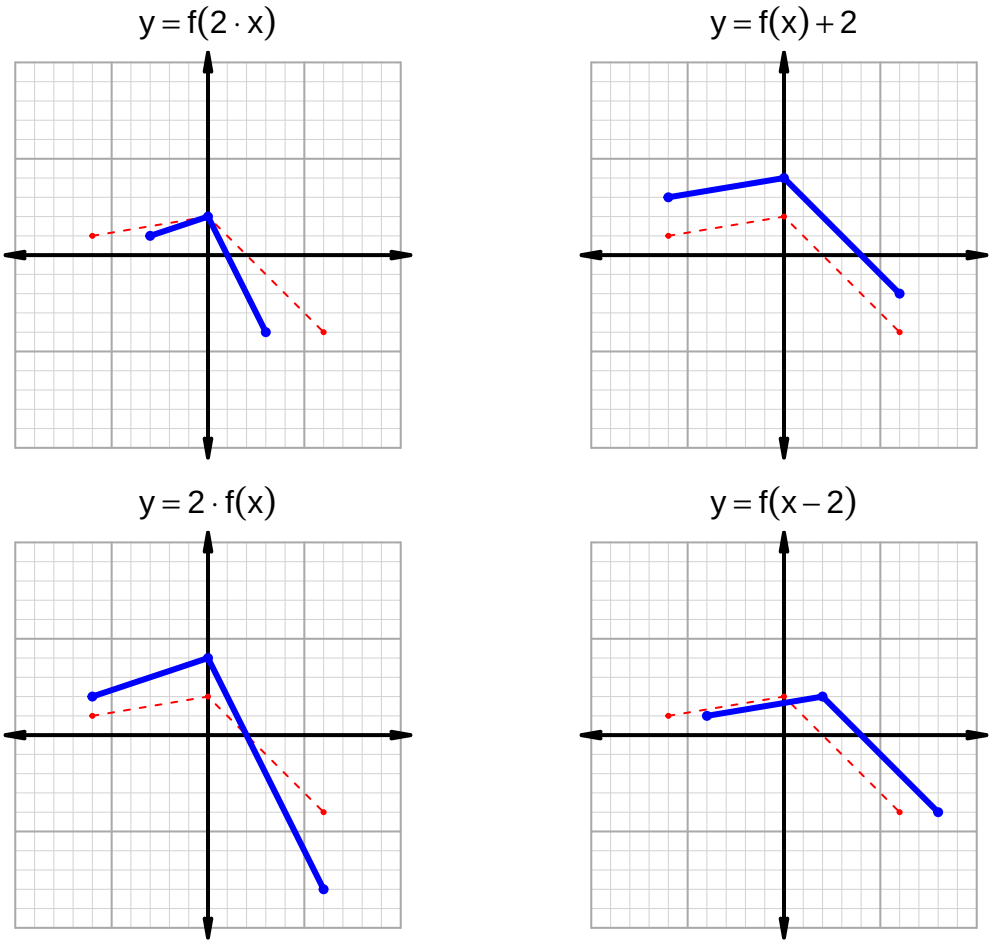
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 45$ and $x_2 = 70$. Express your answer as a reduced fraction.

x	$g(x)$
7	45
42	70
45	42
70	7

$\frac{g(70)-g(45)}{70-45} = \frac{7-42}{70-45} = \frac{-35}{25}$

The greatest common factor of -35 and 25 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{5}$$